

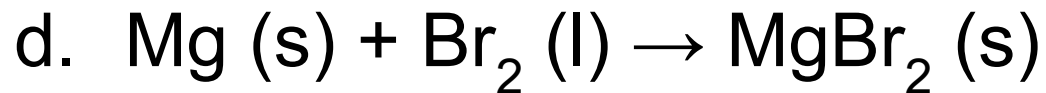
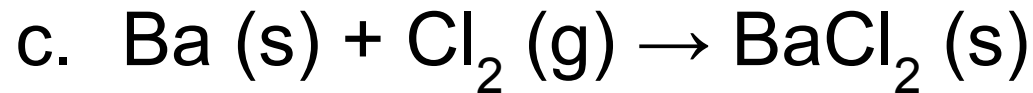
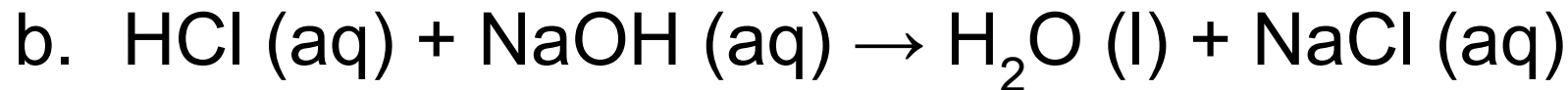
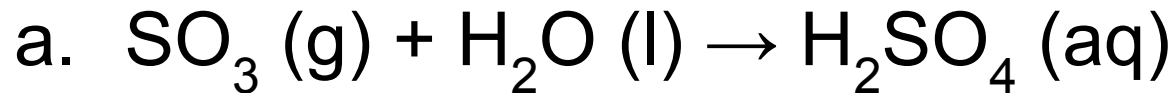
How many electrons are found in a Cobalt +3 ion?

How many electrons are found in a Bromine -1 ion?

What is the charge on the Titanium in the following compound: Ti_2O_3 ?

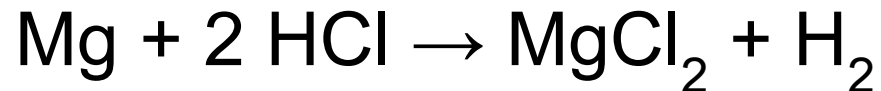
What is the charge on the Sulfur in the hydrogen sulfate ion (HSO_4^{-1})?

Which of the following reactions IS NOT redox?

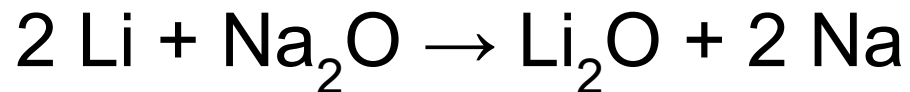


***PROVE YOUR ANSWER USING OXIDATION STATES!!!!

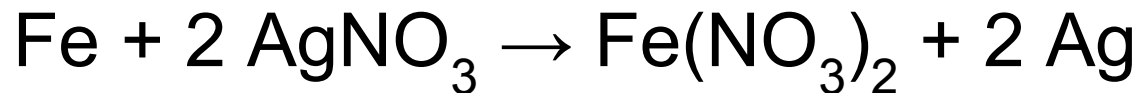
In the following redox reaction, identify the species oxidized and the species reduced.



For the given redox reaction, write the reduction and oxidation $\frac{1}{2}$ reactions. (label which is which)



For the given redox reaction, write the net ionic equation.

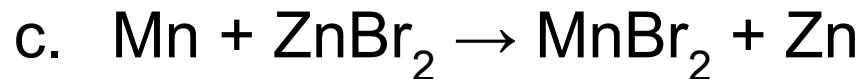
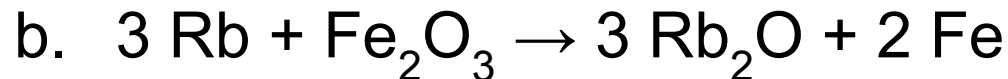
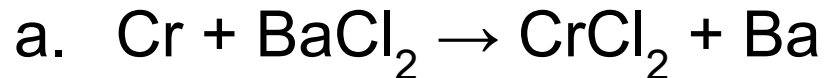


Would the following redox reactions happen spontaneously?

For each:

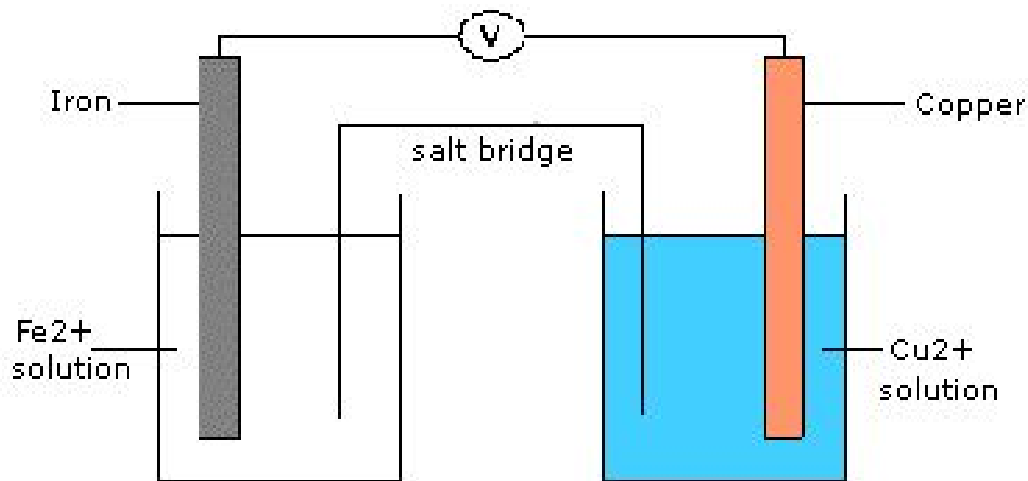
→ Explain why or why not

→ If NOT, propose a new solid metal that *could be used* that *would* react spontaneously.



For the cell below:

- identify if this is a voltaic or an electrolytic cell
- identify which electrode will act as the anode and which will act as the cathode.
- identify who is oxidized and who is reduced
- write the $\frac{1}{2}$ reactions and the net ionic equation
- identify the direction of electron flow



For the cell below:

- identify if this is a voltaic or an electrolytic cell
- identify which electrode will act as the anode and which will act as the cathode.
- identify who is oxidized and who is reduced
- write the $\frac{1}{2}$ reactions and the net ionic equation
- identify the direction of electron flow

